

<b>A. CLASSIFICATION OF SUBJECT MATTER</b> IPC 7 C07C309/82 C08F14/18 H01M8/02																
According to International Patent Classification (IPC) or to both national classification and IPC																
<b>B. FIELDS SEARCHED</b> Minimum documentation searched (classification system followed by classification symbols) IPC 7 C07C C08F H01M																
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched																
Electronic data base consulted during the international search (name of data base and, where practical, search terms used) EPO-Internal, BEILSTEIN Data, WPI Data, PAJ, CHEM ABS Data																
<b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left; padding: 2px;">Category <sup>a</sup></th> <th style="text-align: left; padding: 2px;">Citation of document, with indication, where appropriate, of the relevant passages</th> <th style="text-align: left; padding: 2px;">Relevant to claim No</th> </tr> </thead> <tbody> <tr> <td style="text-align: center; padding: 2px;">X</td> <td style="padding: 2px;">DATABASE CAPLUS CHEMICAL ABSTRACTS SERVICE, COLUMBUS, OHIO, US; XP002303652 Database accession no. 2004:209841 abstract</td> <td style="text-align: center; padding: 2px;">1-4, 9-58</td> </tr> <tr> <td style="text-align: center; padding: 2px;">Y</td> <td style="padding: 2px;">&amp; CN 1 349 962 A (SHANGHAI INSTITUTE OF ORGANIC CHEMISTRY) 22 May 2002 (2002-05-22)</td> <td style="text-align: center; padding: 2px;">5-8, 18-58</td> </tr> <tr> <td style="text-align: center; padding: 2px;">Y</td> <td style="padding: 2px;">WO 97/25369 A (BALLARD POWER SYSTEMS) 17 July 1997 (1997-07-17) claims 8,9; example 6</td> <td style="text-align: center; padding: 2px;">5-8, 18-58</td> </tr> <tr> <td style="text-align: center; padding: 2px;"></td> <td style="padding: 2px; text-align: center;">-/-</td> <td style="text-align: center; padding: 2px;"></td> </tr> </tbody> </table>		Category <sup>a</sup>	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No	X	DATABASE CAPLUS CHEMICAL ABSTRACTS SERVICE, COLUMBUS, OHIO, US; XP002303652 Database accession no. 2004:209841 abstract	1-4, 9-58	Y	& CN 1 349 962 A (SHANGHAI INSTITUTE OF ORGANIC CHEMISTRY) 22 May 2002 (2002-05-22)	5-8, 18-58	Y	WO 97/25369 A (BALLARD POWER SYSTEMS) 17 July 1997 (1997-07-17) claims 8,9; example 6	5-8, 18-58		-/-	
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<input checked="" type="checkbox"/> Further documents are listed in the continuation of box C																
<input checked="" type="checkbox"/> Patent family members are listed in annex																
<p>* Special categories of cited documents.</p> <p>*A* document defining the general state of the art which is not considered to be of particular relevance</p> <p>*E* earlier document but published on or after the international filing date</p> <p>*L* document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</p> <p>*O* document referring to an oral disclosure, use, exhibition or other means</p> <p>*P* document published prior to the international filing date but later than the priority date claimed</p> <p>*T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</p> <p>*X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone</p> <p>*Y* document of particular relevance, the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art</p> <p>*&amp;* document member of the same patent family</p>																
Date of the actual completion of the international search																
7 December 2004																
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Authorized officer																
English, R																

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 98/20573 A (DU PONT DE NEMOURS) 14 May 1998 (1998-05-14)  claim 1; examples -----	1,5,9, 18,31, 32,48
A	WO 96/39379 A (BALLARD POWER SYSTEMS) 12 December 1996 (1996-12-12)  claims 1,4,16,18; examples -----	1,5,9, 18,31, 32,48
A	EP 1 170 310 A (SAMSUNG ELECTRONICS) 9 January 2002 (2002-01-09)  page 8, line 11 - line 41; claims 1,7,8; figure 2 -----	1,5,9, 18,31, 32,48

## INTEF INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No

PCT/US2004/020706

Patent document cited in search report		Publication date		Patent family member(s)	Publication date
CN 1349962	A	22-05-2002	NONE		
WO 9725369	A	17-07-1997	US AT AU AU CA WO DE DE EP JP US US US US	5834523 A 194366 T 704923 B2 1187297 A1 2240495 A1 9725369 A1 69702442 D1 69702442 T2 0882088 A1 2000502625 T 2002161061 A1 5985942 A 6258861 B1 2001056128 A1	10-11-1998 15-07-2000 06-05-1999 01-08-1997 17-07-1997 17-07-1997 10-08-2000 08-02-2001 09-12-1998 07-03-2000 31-10-2002 16-11-1999 10-07-2001 27-12-2001
WO 9820573	A	14-05-1998	AU DE DE EP JP KR WO US	5099498 A 69728053 D1 69728053 T2 0938755 A1 2001503910 T 2000052944 A 9820573 A1 6033804 A	29-05-1998 15-04-2004 21-10-2004 01-09-1999 21-03-2001 25-08-2000 14-05-1998 07-03-2000
WO 9639379	A	12-12-1996	US AU AU CA WO DE DE EP JP US US	5602185 A 709356 B2 5889396 A 2221813 A1 9639379 A1 69610322 D1 69610322 T2 0848702 A1 11506149 T 5684192 A 5773480 A	11-02-1997 26-08-1999 24-12-1996 12-12-1996 12-12-1996 19-10-2000 26-04-2001 24-06-1998 02-06-1999 04-11-1997 30-06-1998
EP 1170310	A	09-01-2002	KR EP US US	2002004065 A 1170310 A2 2004202913 A1 2002015874 A1	16-01-2002 09-01-2002 14-10-2004 07-02-2002